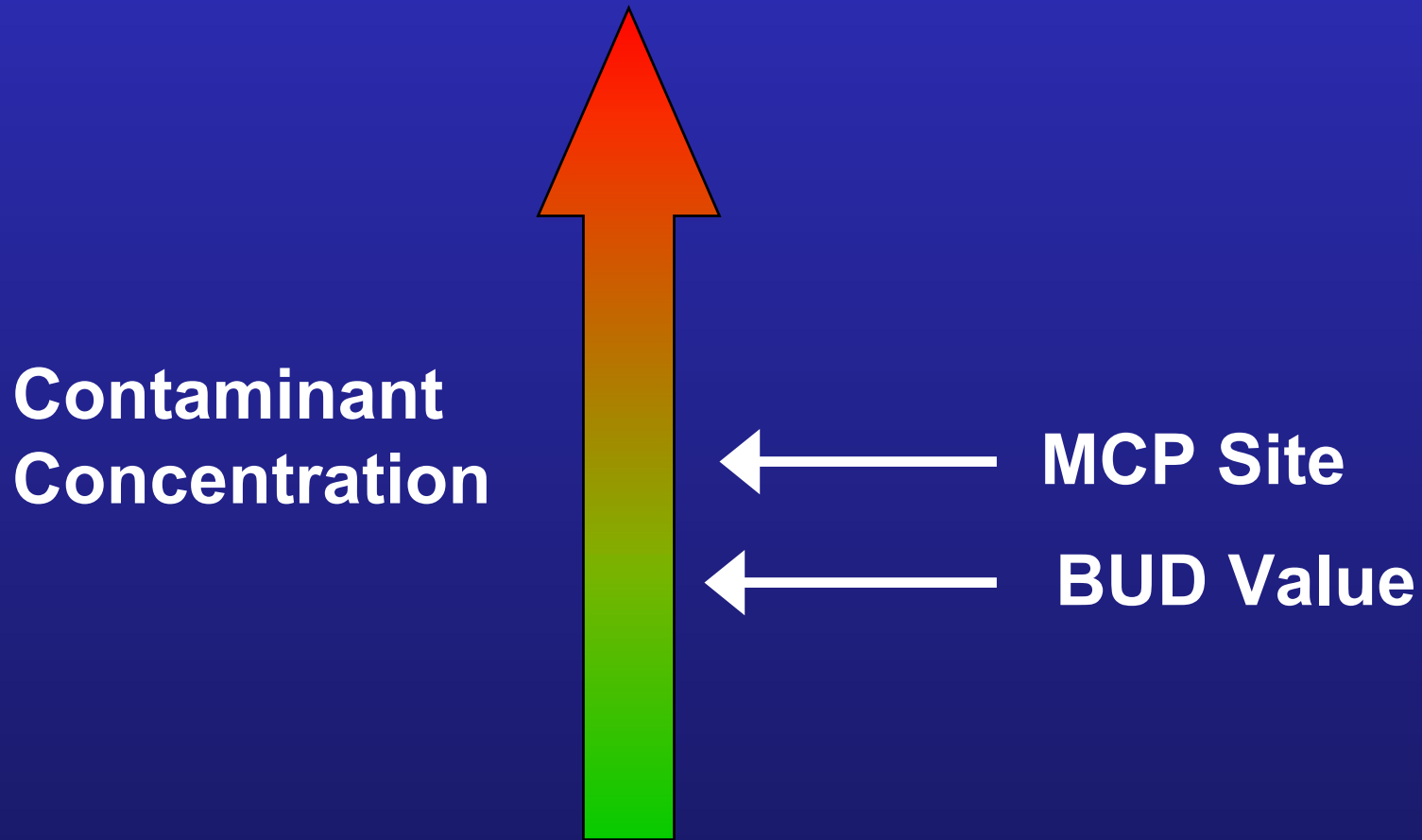
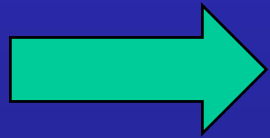


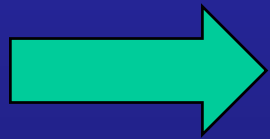
Development of BUD Values



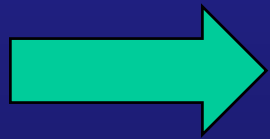
Categories of BUD Values



S-1 protective of unrestricted use



S-2 protective of commercial use



**S-3 protective of construction/
utility work**

Decision Tree for BUD Soil Values (non CCCs)

**Non-Cancer
Risk-Based
Concentration**

**Cancer Risk-
Based
Concentration**

**Groundwater
Protection
Concentration**

PQL

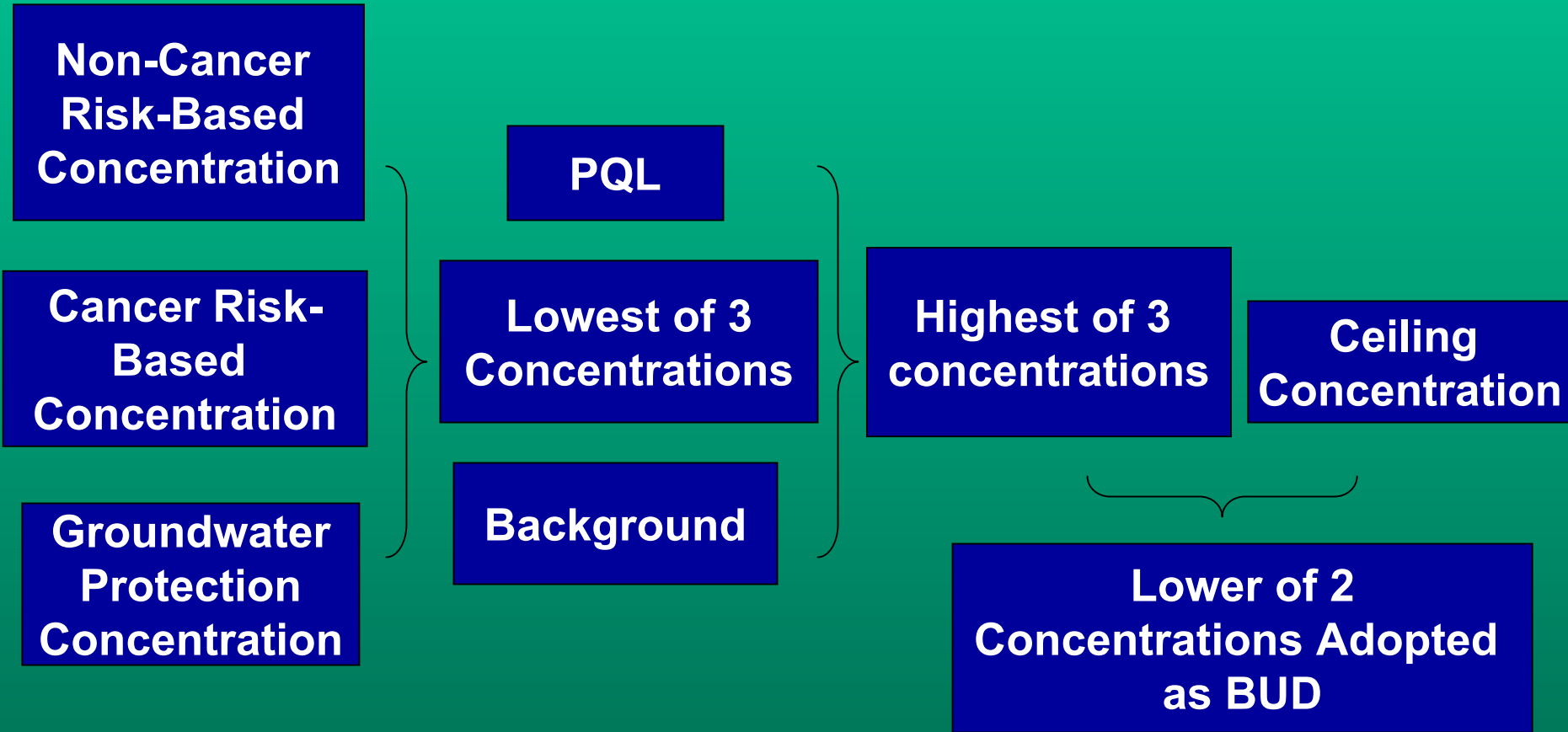
**Lowest of 3
Concentrations**

Background

**Highest of 3
concentrations**

**Ceiling
Concentration**

**Lower of 2
Concentrations Adopted
as BUD**



Decision Tree for BUD Soil Values (non CCCs)

**Non-Cancer
Risk-Based
Concentration**

**Cancer Risk-
Based
Concentration**

**Groundwater
Protection
Concentration**

PQL

**Lowest of 3
Concentrations**

Background

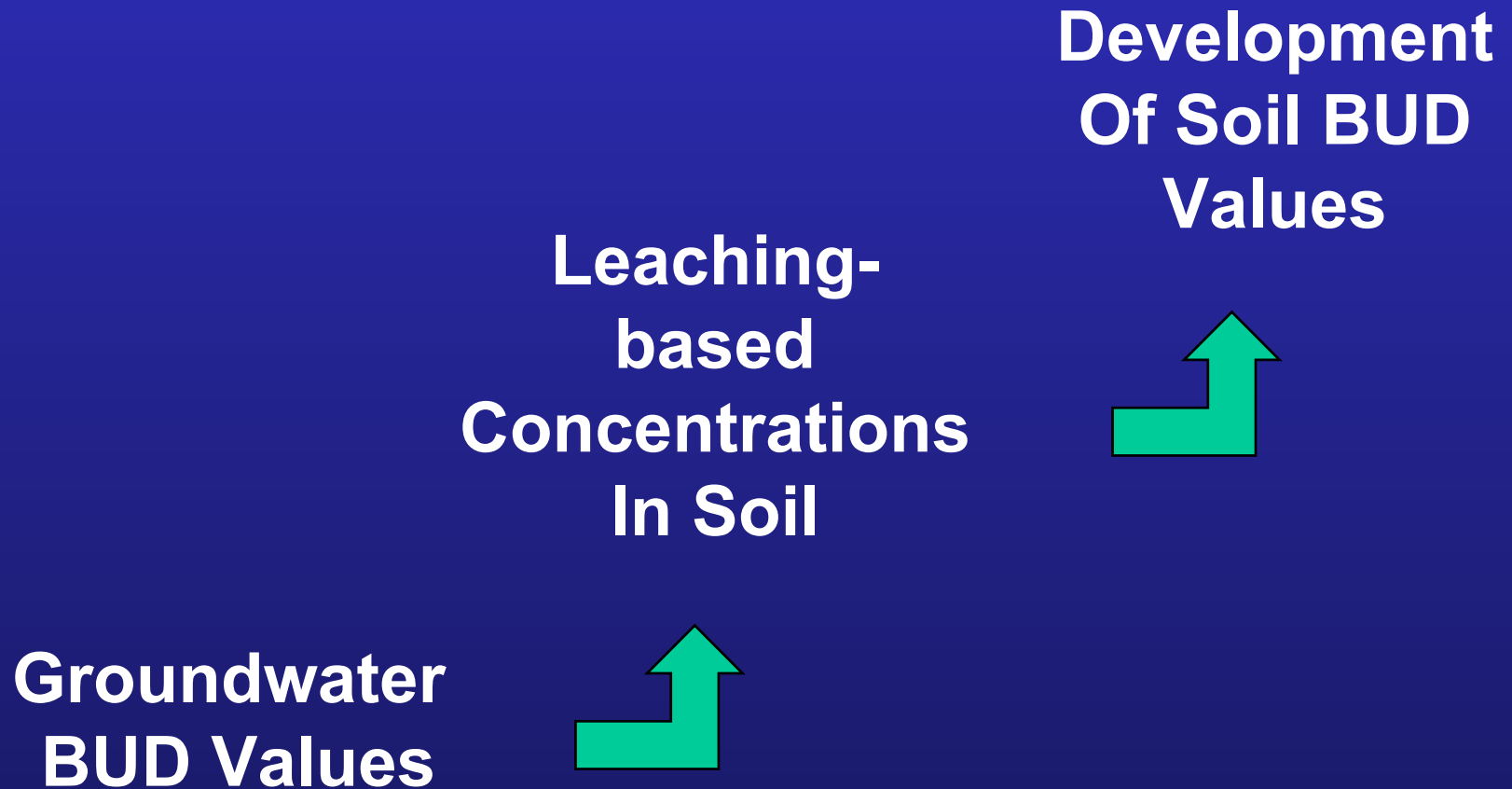
**Highest of 3
concentrations**

**Ceiling
Concentration**

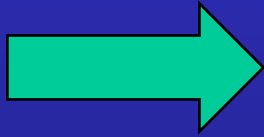
**Lower of 2
Concentrations Adopted
as BUD**



Groundwater Protection

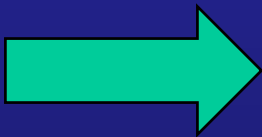


BUD Values for Groundwater



Values protective of

- **Drinking water**
- **Indoor air exposures**
- **Aquatic organisms**



Consider

- **Background**
- **PQLs**

Decision Tree for BUD Soil Values (non CCCs)

**Non-Cancer
Risk-Based
Concentration**

**Cancer Risk-
Based
Concentration**

**Groundwater
Protection
Concentration**

PQL

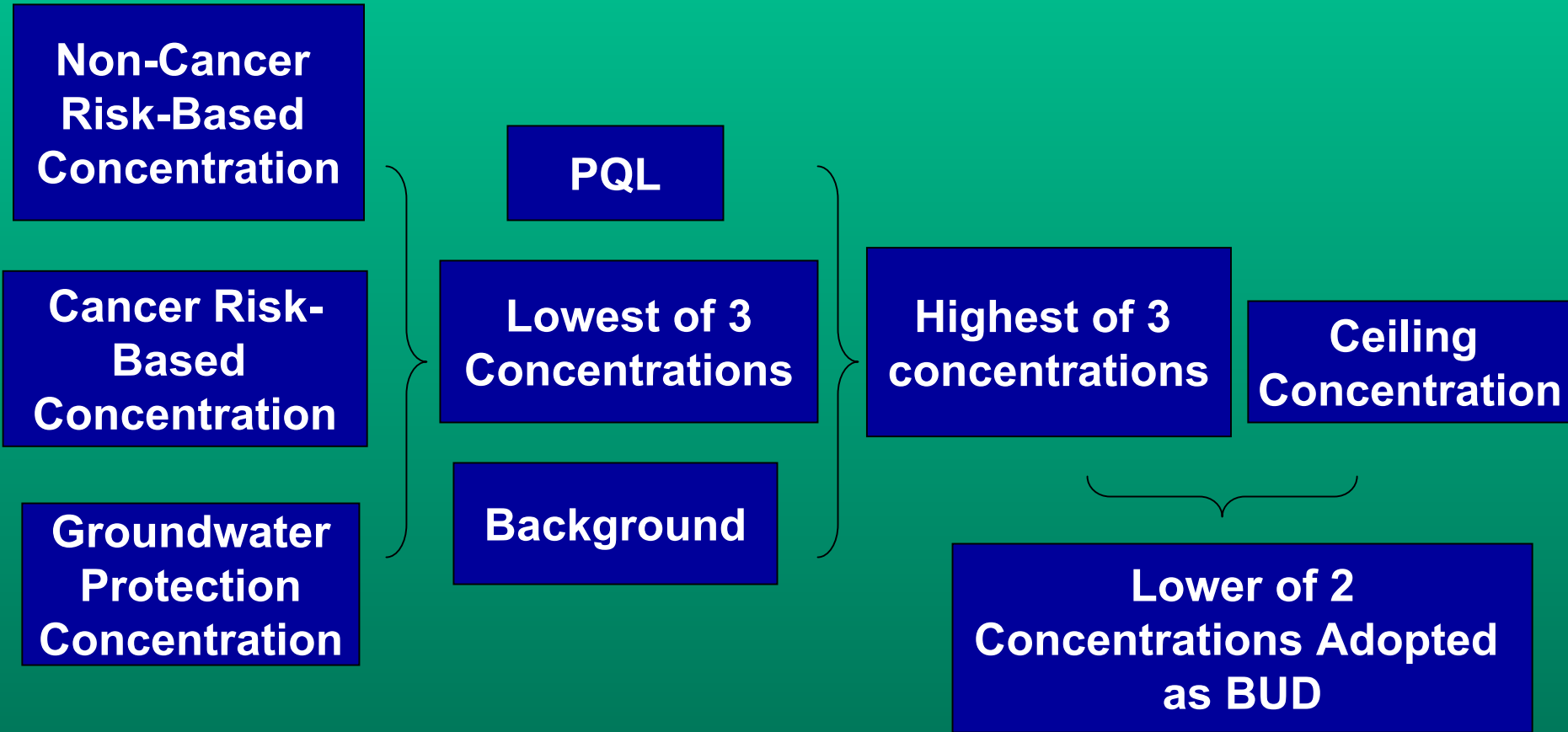
**Lowest of 3
Concentrations**

Background

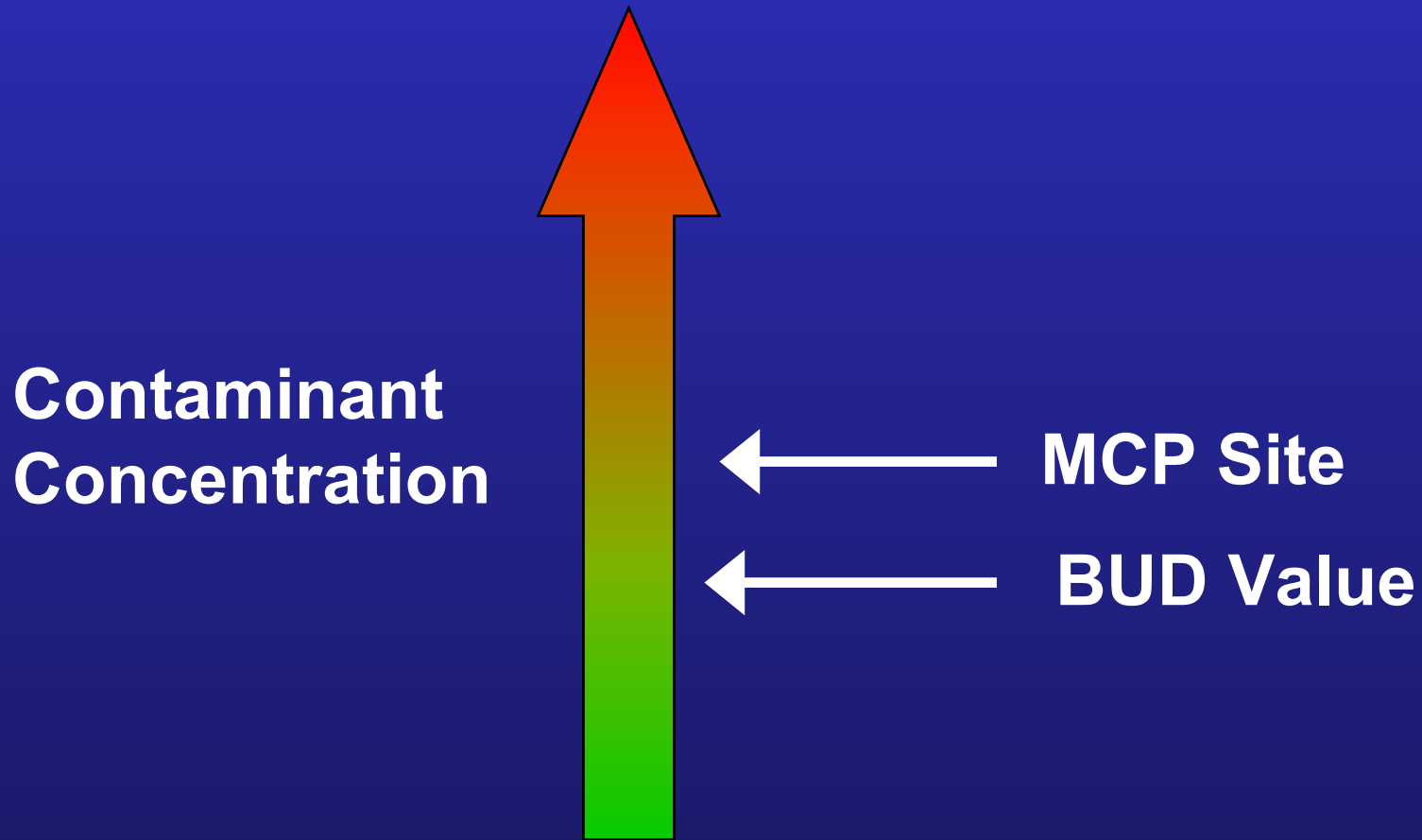
**Highest of 3
concentrations**

**Ceiling
Concentration**

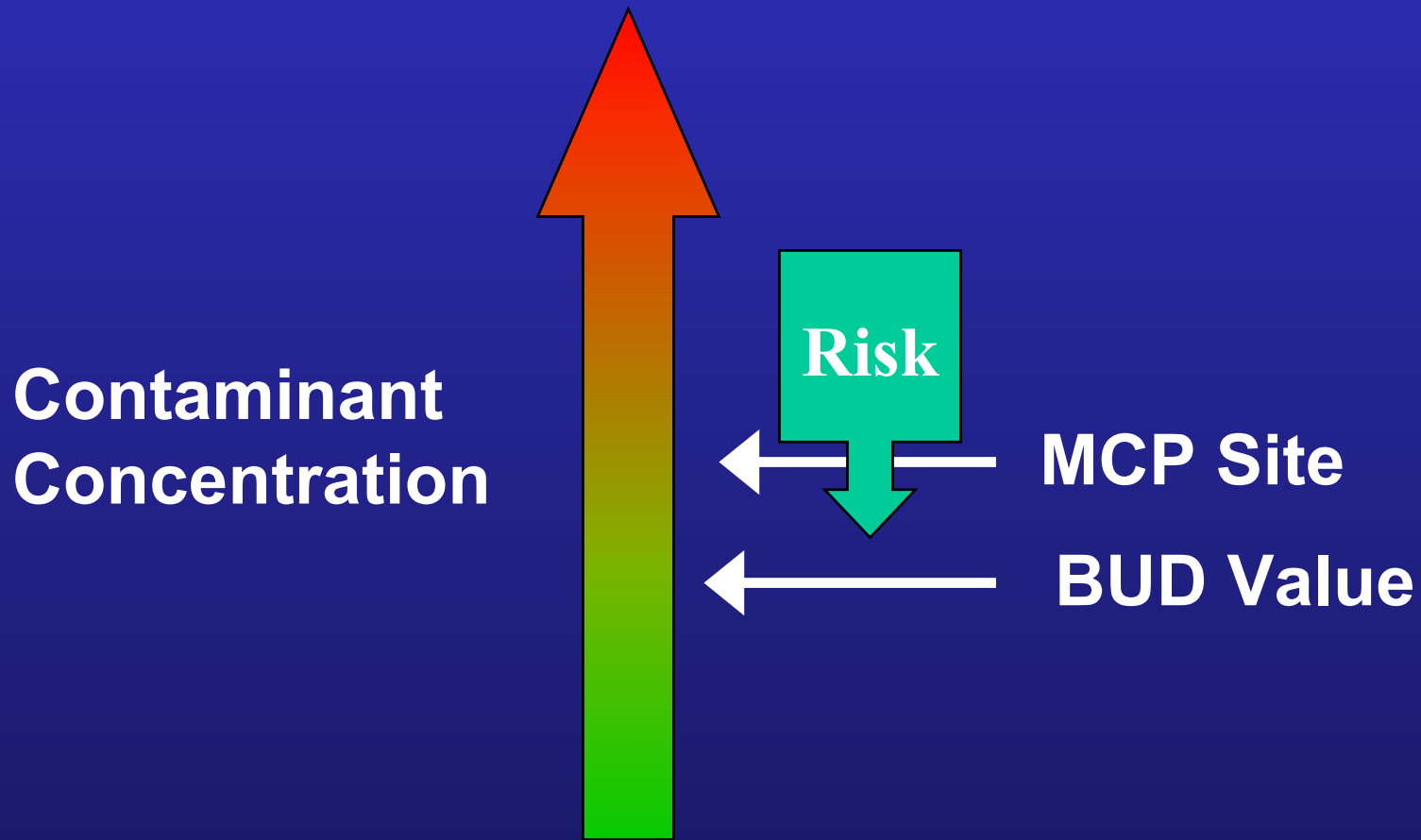
**Lower of 2
Concentrations Adopted
as BUD**



Development of BUD Values



Development of BUD Values



Decision Tree for BUD Soil Values (non CCCs)

**Non-Cancer
Risk-Based
Concentration**

**Cancer Risk-
Based
Concentration**

**Groundwater
Protection
Concentration**

PQL

**Lowest of 3
Concentrations**

Background

**Highest of 3
concentrations**

**Ceiling
Concentration**

**Lower of 2
Concentrations Adopted
as BUD**

MCP versus BUD

- Risk Criteria -



BUD

Risk Criteria for **BUD** values

HI = 0.1 and ELCR = 5×10^{-7}

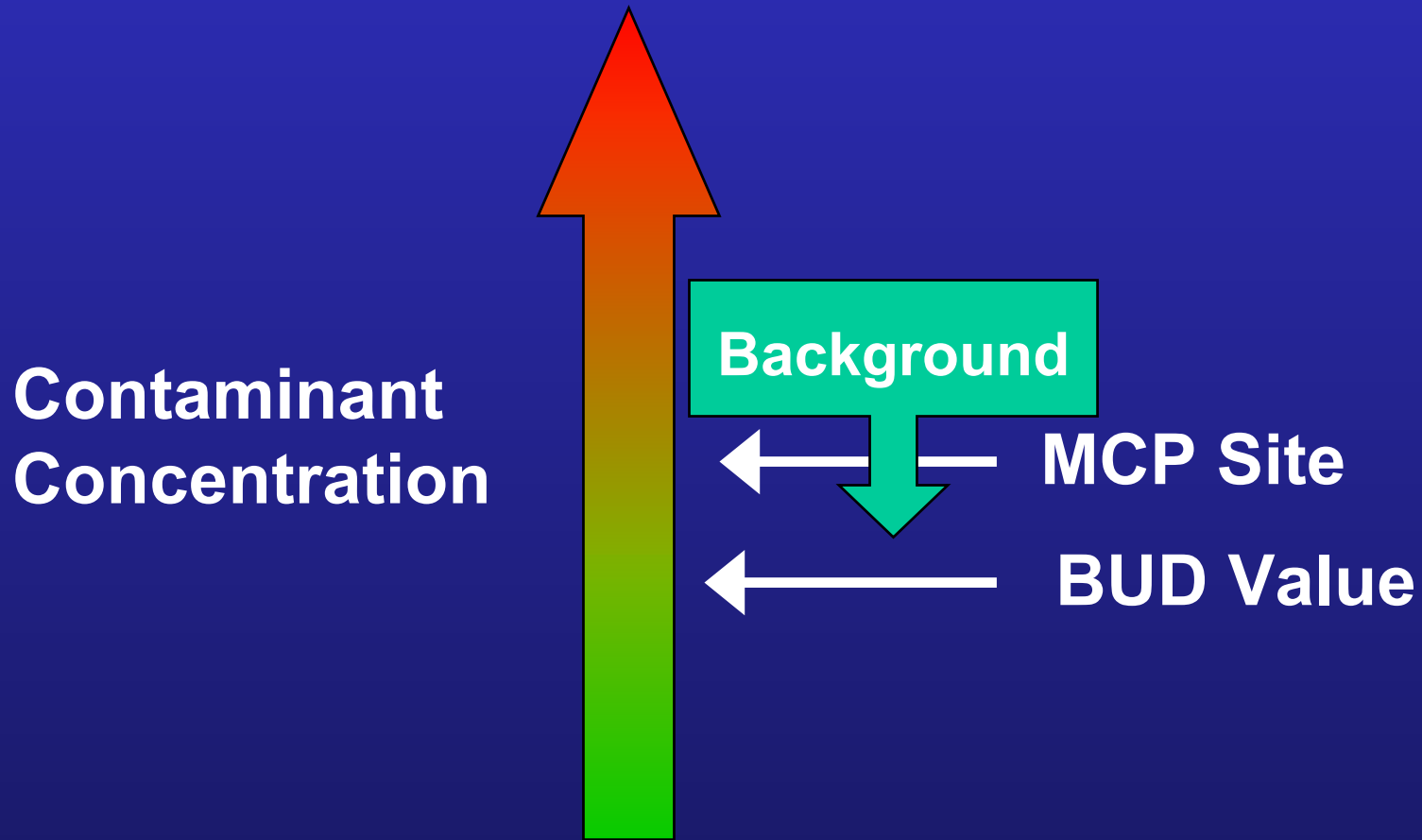


MCP

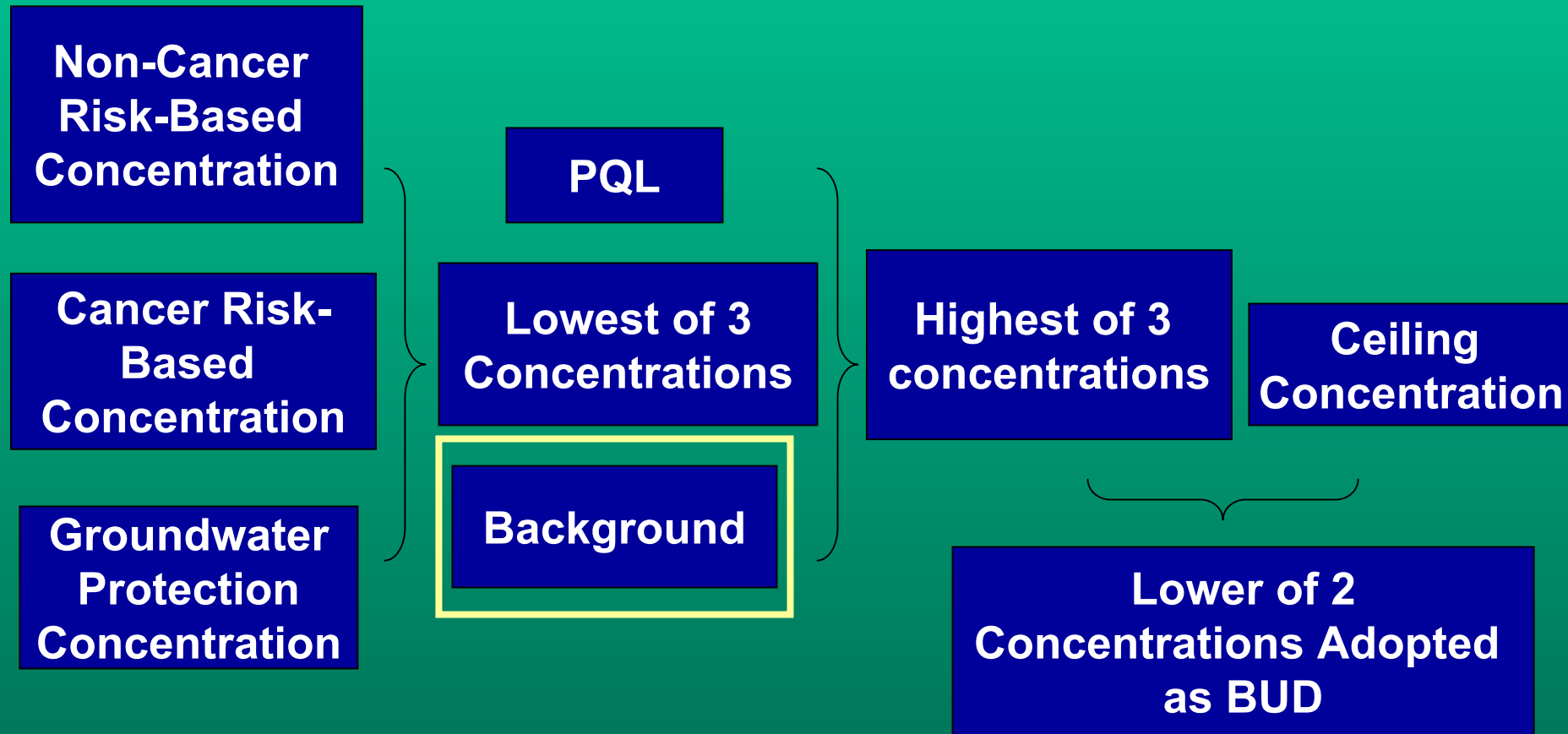
Risk Criteria for **MCP** values

HI = 0.2 and ELCR = 1×10^{-6}

Development of BUD Values



Decision Tree for BUD Soil Values (non CCCs)



MCP versus BUD

- Background -



BUD

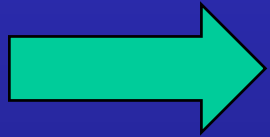
Background used to develop **BUD** value represents the 50th percentile of the data set.



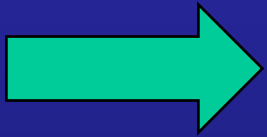
MCP

Background used to develop **MCP** value represents 75th percentile of the data set.

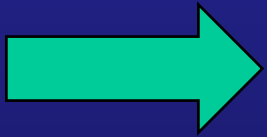
Summary of BUD Values



Three different categories



Never lower than background or PQL



**Prevent creation of new MCP sites
(change risk and background criteria)**